

State of California  
AIR RESOURCES BOARD

RESEARCH PROPOSAL

Resolution 05-43

September 15, 2005

Agenda Item No.: 05-8-2

WHEREAS, the Air Resources Board has been directed to carry out an effective research program in conjunction with its efforts to combat air pollution, pursuant to Health and Safety Code sections 39700 through 39705;

WHEREAS, a research proposal, number 2591-249, entitled "Responses to Short-term Fluctuation in Particulate Air Pollution in Asthmatic Children: Implications for Asthma Natural History", has been submitted by the University of California, Berkeley;

WHEREAS, proposal 2591-249 will augment an existing research contract, Agreement 99-322, which will remain in effect until May 2006;

WHEREAS, time is of the essence in Agreement 99-322, and the Air Resources Board considers timely submittal of the draft final report under Agreement 99-322 as important to obtaining the maximum benefit from the collected data and analyses;

WHEREAS, the Research Division staff has reviewed and recommended this proposal for approval; and

WHEREAS, the Air Resources Board will fund this proposal for a total amount not to exceed \$350,000; and

WHEREAS, the Research Screening Committee has reviewed and recommends for funding:

Proposal Number 2591-249 entitled "Responses to Short-term Fluctuation in Particulate Air Pollution in Asthmatic Children: Implications for Asthma Natural History", has been submitted by the University of California, Berkeley, for a total amount not to exceed \$350,000.

NOW, THEREFORE BE IT RESOLVED, that the Air Resources Board, pursuant to the authority granted by Health and Safety Code section 39703, hereby accepts the recommendation of the Research Screening Committee and approves the following:

Proposal Number 2591-249 entitled "Responses to Short-term Fluctuation in Particulate Air Pollution in Asthmatic Children: Implications for Asthma Natural History", has been submitted by the University of California, Berkeley, for a total amount not to exceed \$350,000.

BE IT FURTHER RESOLVED, that the Executive Officer is hereby authorized to initiate administrative procedures and execute all necessary documents and contracts for the research effort proposed herein, and as described in Attachment A, in an amount not to exceed \$350,000.

BE IT FURTHER RESOLVED, that the Executive Officer is hereby directed to execute all necessary documents, contracts, and contract amendments to ensure receipt of a draft final report under Agreement 99-322 deemed acceptable by the Air Resources Board prior to payment of the first invoice under the research effort proposed herein.

I hereby certify that the above is a true and correct copy of Resolution 05-43, as adopted by the Air Resources Board.

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Lori Andreoni, Clerk of the Board

## ATTACHMENT A

### “Responses to Short-term Fluctuation in Particulate Air Pollution in Asthmatic Children: Implications for Asthma Natural History”

#### **Background**

The effects of chronic exposure to ambient air pollutants on the long-term outcomes of children with asthma are largely unknown. Specifically more information is needed in terms of overall pollutant mixture as well as particular components or properties of the gas/particle mixture that may be of greater importance. To address this important data gap, the ARB has funded a 5-year longitudinal cohort study, the Fresno Asthmatic Children's Environment Study (FACES). The overall goal of the study is to determine if children with asthma who have adverse responses to short-term, daily increases in concentrations of ambient air pollutants and bioaerosols are more likely to have increased long-term asthma illness and decreased lung function growth. Through this project, the investigators have recruited a cohort of over 300 children, who are participating in the study. A substantial amount of analyses have been carried out with conventional and causal statistical procedures. In order to further investigate long-term health impacts in this cohort, the investigators hope to continue their work and have applied to the National Institutes of Health (NIH) for another 5 years of funding. This proposal will provide additional funding to the FACES study to support the children's' cohort (through additional health data collection) and the investigator team until the NIH funding occurs. The additional funding will not be used to extend the original FACES study.

#### **Objective**

The objectives of this proposal are to provide support for the childrens' cohort and the investigator team while the investigators secure support from the National Heart, Lung, and Blood Institute of NIH. This bridge funding will allow maintenance of the study cohort, collection of essential exposure health data, and retention of core field office and data analysis staff.

#### **Methods**

The investigators will continue to conduct 14-day panel studies for collection of health and home exposure data with all currently enrolled FACES subjects. Investigators will continue to collect air quality exposure data at the Fresno central site, including bioaerosols (endotoxin, fungi, and pollen) and will conduct several analyses with data collected during the original 5 years of FACES funding. These will be new analyses that will expand and enhance the statistical analyses conducted for the final report of the original 5 year FACES, study (due fall of 2005). Analyses will include the effect of traffic exposure on growth of lung function, the interactions of exposures to bioaerosols with exposures to several air pollutants on acute asthmatic responses, and the effects of estimated lifetime cumulative exposures to several air pollutants on baseline asthma severity and lung function.

**Expected Results**

This project will provide funds to maintain the valuable FACES cohort. Furthermore, this project will provide additional data and use innovative analysis techniques to determine long-term health impacts of air pollution in asthmatic children.

**Significance to the Board**

The FACES study has generated a unique body of detailed exposure and individual health data. Continued collection and analysis of the data will allow the investigators to study the long-term health effects of air pollution in one of our most vulnerable populations, children with asthma. The results will provide valuable information to the Board in its effort to control the burden of asthma through reductions in air pollution.

**Contractor:**

University of California, Berkeley

**Contract Period:**

8.5 months

**Principal Investigator (PI):**

Ira Tager, MD, MPH

**Contract Amount:**

\$350,000

**Basis for Indirect Cost Rate:**

The State and the UC system have agreed to a ten percent indirect cost rate.

**Past Experience with this Principal Investigator:**

We have two projects in progress with this investigator: the original FACES project and an analysis of the health benefits of air pollution control. The final report for the health benefits project will be received in mid-year 2006. The FACES draft final report will be received in fall 2005. The investigators applied for NIH funding for the continuation of the FACES project in the last funding cycle and received a moderately good score, although that score did not qualify the project for the limited NIH funds in that round. They have reapplied after addressing the comments of the NIH reviews and are awaiting the outcome of the current review cycle. The investigators are optimistic of funding in this cycle.

**Prior Research Division Funding to UCB:**

Year	2005	2004	2003
Funding	\$143,975	\$922,057	\$725,244

# BUDGET SUMMARY

University of California, Berkeley

“Responses to Short-term Fluctuation in Particulate Air Pollution in Asthmatic Children:  
Implications for Asthma Natural History”

## **DIRECT COSTS AND BENEFITS**

1.	Labor and Employee Fringe Benefits	\$	246,357
2.	Subcontractors	\$	0
3.	Equipment	\$	0
4.	Travel and Subsistence	\$	3,825
5.	Electronic Data Processing	\$	0
6.	Reproduction/Publication	\$	2,000
7.	Mail and Phone	\$	6,821
8.	Supplies	\$	5,252
9.	Analyses	\$	0
10.	Miscellaneous	\$	<u>57,538<sup>1</sup></u>
	Total Direct Costs		\$321,793

## **INDIRECT COSTS**

1.	Overhead	\$	28,207
2.	General and Administrative Expenses	\$	0
3.	Other Indirect Costs	\$	0
4.	Fee or Profit	\$	<u>0</u>
	Total Indirect Costs		<u>\$28,207</u>

## **TOTAL PROJECT COSTS**

**\$350,000**

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<sup>1</sup> Miscellaneous items:

- Rent for Berkeley offices (\$15,633) –Due to the extensive statistical analyses in this project a joint space is needed where the analysis team can house their equipment and conduct their analyses
- Rent for field office rent in Fresno (\$24,093) – Offices are for cohort support where the participants in the study come for measurements and to meet with the investigators and for other field data collection and review.
- Utilities (\$3,312) – Utilities for operation of the Berkeley and Fresno offices.
- Retention efforts (\$2,000) – Retention of subjects in the cohort is critical. The investigators send cards, etc. to maintain contact with the participants toward this goal.
- Clinic incentives (\$6,500) – Incentives are provided directly to the study subjects to encourage continued participation.
- Equipment maintenance (\$6,000) – Maintenance, repair, and replacement of critical equipment is needed to ensure accurate and complete data collection.